

times as surprising and swiftly various as that of the Eocene Mammalia. We presume that the Stormberg series must then include the whole of the Trias, and not merely the Rhætic, as Feistmantel and Seward have proposed. The consideration of this and similar questions is made far more interesting by the appearance of Dr. Corstorphine's address on the history of stratigraphical investigation in South Africa ("Report of the South African Association for the Advancement of Science," 1904, p. 145), to which is appended a table showing the classifications of various authors, starting with the brilliant and perceptive work of Bain in 1856.

Prof. R. Broom has provided Mr. Rogers with a chapter on the Karroo reptiles, in which the early carnivorous types, *Ælurosaurus*, *Lycosuchus*, &c., are separated from the Theriodonts as "Therocephalia." The pose given to the skeleton of *Pareiasaurus* in Fig. 18 is more erect than that at present adopted in the British Museum. The well known work of Prof. H. G. Seeley is mentioned later in the bibliographical appendix.

Mr. Rogers, quoting the view of Mr. Kitchin, who compares the fossils with those of similar beds in India, does not allow the presence of Jurassic strata in the Uitenhage series, so that the Jurassic system may be represented merely by the underlying unconformity (compare p. 408). The perforation of the Stormberg and preceding rocks by the diamantiferous volcanic pipes occurred, in all likelihood, in Lower Cretaceous times. The bending up of the strata round these vents presents us with a curious reminder of the old "crater of elevation" theory.

Denudation has attacked the surface of the interior of the colony "uninterruptedly from the close of the Stormberg period (Rhætic) to the present day," and the folded belt of the south seems to have furnished a fairly complete barrier against inroads of the Cretaceous sea (p. 414). A useful chapter on the geological features to be observed along the main lines of railway concludes this compact and highly attractive handbook.

GRENVILLE A. J. COLE.

THE NAUMANN FESTIVAL AT CÖTHEN.

NAUMANN is but a name to nine out of ten British ornithologists, and the proportion of them who have held in hand a volume with that name on the title-page must be smaller still. Yet it was borne by two men who, taking them all round, were the most practical ornithologists that ever lived, for their personal knowledge of the birds of Central Europe was not exceeded by that of any of their contemporaries, and it may be fairly doubted whether any of their successors, vastly improved as are the modern means of acquiring such knowledge, have attained to the like acquaintance.

The elder Naumann, Johann Andreas, seems hardly ever to have quitted the little village of Ziebigk, near Cöthen, in the duchy of Anhalt, where he was born in 1744, the son of a small landed proprietor, to whose estate he succeeded. He has left a curious autobiographical sketch, which was prefixed to the first volume of the edition of the joint work of himself and his son, Johann Friedrich, published in 1822. If ever a man devoted himself to the observation and study of birds it was this Johann Andreas, who from his boyhood passed days and nights in this sole pursuit. How he found time to take a wife—for he tells us that he often forgot his dinner—is marvellous; but marry he did, and had three sons, the eldest, Johann Friedrich, already named, born in 1780, and two others; one of them, Carl Andreas, born in 1786, became a fair assistant to his father and brother, without, however, publishing anything on his own account. The father

brought up these three boys to follow his own tastes and live his own life. A gun was put into their hands as soon as they could hold it, they were made familiar with every device for catching birds, and they were also taught to draw. In this last respect the eldest attained so much proficiency that by the time he was fifteen he had executed a great number of drawings of birds, which the father proceeded to have engraved on copper and to publish in folio form. The work thus produced proves to be one of the rarest in ornithological literature, if literature it may be called, seeing that not a word of letterpress accompanied the plates. Whether a complete set of them exists anywhere is uncertain, and Dr. Leverkühn's labours seem to show that not quite a dozen more or less imperfect copies are known, though there is no room here for bibliographical details. The next thing the father did was to bring out in small octavo the first volume of what was called "A Detailed Description of the Forest-, Field-, and Water-birds of the Principality of Anhalt and the Neighbouring Districts." This appeared in 1797, and was illustrated by coloured figures by the son Johann Friedrich. Some of them are reproductions of those in the older series, but the style of drawing was manifestly improved, and, moreover, went on improving as the work itself did, for it quite outgrew the bounds of its native principality, and the fourth and last volume, published in 1803, appeared as "The Natural History of the Land- and Water-birds of Northern Germany and the Adjoining Countries." This was followed by a series of eight supplements, the last of which came out in 1817. A remarkable feature of this work is its extreme simplicity and truth, and the absence of all scientific pretence. There is not even a Latin name in it! Yet there was no attempt by "writing down" to gain popularity, and whether it became popular is doubtful. All that can be said is that copies are now not easily to be had. In England when a man tries to do a thing of this kind we know too well what is generally the lamentable result. He makes a fool of himself on almost every page; but this is just what Johann Andreas did not. He wrote with quiet dignity from his own knowledge, and his knowledge was sound. There was no need for him to borrow from anybody else.

The father's work being thus successfully concluded, the son, Johann Friedrich, lost no time in bringing out a new edition of it, and it is on this edition that the latter's fame rests, and rests securely. The preface is dated 1818, and some copies of the first volume are said to bear 1820 on the title-page. Doubtless it was then ready for publication, though for some reason it seems to have been delayed for a couple of years. Twelve volumes (parts they are called) appeared at long intervals, the last in 1844, and it may be truly averred that for completeness nothing like them exists in any language. They continue the same simple and direct style of the father's work; but the son willingly cited other authors and showed that he had read them. He also extended his area of observation, journeying to Jutland in the north and to Hungary in the south, beside voyaging to Heligoland—the ornithological peculiarities of which he was the first to detect. Moreover, he discovered that anatomy was not to be neglected, and accordingly each genus as he treated of it had prefixed to it a brief account of its internal structure, and to this end he had the good fortune to obtain the services of Christian Ludwig Nitzsch, who carried on this portion of the work until his death in 1837, when his place was taken by Rudolf Wagner. Two years after the work was ended the author began a supplement, which had not proceeded far when he died, in 1857, and this was left to be completed by two of his friends, the late Prof. J. H. Blasius and Dr. Eduard Beldamus.

Carefully elaborated as this great work had been, its information had, of course, fallen behind the times, and

a natural desire was expressed for a new edition. The first part of this appeared in 1897, under the general editorship of Dr. Carl R. Hennicke, of Gera, who has been assisted by a company of thirty-six coadjutors, comprising the chief ornithologists of Central Europe, and to celebrate the recent completion of this grand undertaking in ten folio volumes a *Naumann-Feier* is to be held at Cöthen on Sunday, May 14, under the direction of Dr. Jacobi von Wangelin, of Merseburg, and Prof. Rudolf Blasius, of Brunswick, the presidents respectively of the German Bird Protection Union and the German Ornithological Society. The business of the day is announced as of the simplest character, just as one may suppose would be consonant with the wishes of the men to be honoured—an inspection of the Naumann collections, now housed in the ducal palace, a pilgrimage to the graves of the Naumanns at Ziebigk, their old abode, on which a laurel wreath will be laid, and a visit of respect to the daughter-in-law of Johann Friedrich, a return to Cöthen for a festival dinner—that is all. Who will attend I know not, but assuredly every German ornithologist will be present in the spirit, and my chief object in writing these lines is that British ornithologists should sympathise with their German brethren on the occasion. Making every allowance for the ordinary Englishman's linguistic deficiencies, it is not to the credit of our predecessors in this country, though there are many of whom we may be justly proud, that until the year 1850 not one of them seems ever to have heard of the Naumanns and their incomparable works. It was Mr. G. R. Gray who, in a British Museum catalogue, first cited that of Johann Friedrich, and then merely on nomenclatural grounds. It was there that I first met with its title, and I lost no time in seeking the work in the library of Cambridge University. Words fail me to express the delight with which I looked into one volume after another of this huge store of information, or the admiration with which I regarded its unpretentious but exquisitely executed plates. That was nearly five-and-fifty years ago, but much as the study has since advanced, the opinion I then formed I hold now, that for fulness of treatment, perspicuity, and general accuracy, the work of Johann Friedrich Naumann has not been surpassed.

Willingly would I dwell longer on the subject, but I think I may have said enough, though I must add that for many of the details above given I am indebted to two articles by Dr. Lindner published in "Die Schwalbe" of Vienna for 1894 (Nos. 7 and 8), and still more to Dr. Paul Leverkühn's excellent biographical preface to the first volume of the recent edition already mentioned, which has been separately printed, "Biographisches über die Drei Naumanns" (Gera-Untermhaus: 1904). Later still that gentleman has come into possession of much of Johann Friedrich's correspondence, which it is sincerely to be hoped he will find the means of publishing, as it can hardly fail to be of great interest.

ALFRED NEWTON.

DR. J. E. DUTTON.

IT is with deep regret that we announce the sudden death of Dr. Dutton (Walter Myers Fellow) at Kosongo, in the Congo, on February 27, while actively engaged in the investigation of trypanosomiasis and tick fever.

The expedition which Dr. Dutton was leading was a very completely equipped one, and commenced work in the Congo in September, 1903. It consisted originally of Drs. Dutton, Todd, and Christy, and was subsequently joined by Dr. Inge Heiberg. The Belgian Government erected a special hospital for them, and placed every possible facility at their disposal both for investigation and travelling. Whilst conducting the

investigation and mapping the distribution of sleeping sickness and tick fever, they travelled several thousand miles by river and road, and reached a station beyond Stanley Falls.

In the death of Dr. Dutton, not only have the Tropical School and the University of Liverpool lost a brilliant graduate, but medicine has lost one of its most promising men, a man who, although only twenty-nine years of age, had already won a recognised position throughout the scientific world. Educated at the King's School, Chester, Dr. Dutton proceeded to the University of Liverpool, where he rapidly made his way to the front. In 1897 he was appointed to the George Holt fellowship in pathology, a post which has had a marked effect in stimulating men to devote time to research and in supplying able investigators in tropical medicine. In 1900 he commenced the study of tropical medicine under the leadership of Dr. Annett, and together with Dr. Elliott, of Toronto University, he proceeded to Nigeria in order to study the habits of the Anopheles and the most effective measures of prevention of malaria. In 1901 he proceeded alone to the Gambia, and drew a comprehensive and useful anti-malarial report which has proved of the greatest service to the colony. It was during this expedition that he identified in the blood of the patient shown to him by Dr. Forde, of Bathurst, the trypanosome which he described and named as *Trypanosoma gambiense*.

Having established the presence of the trypanosome in man, Dr. Dutton immediately set off on another expedition to ascertain how far it was distributed in the native population. This expedition formed the basis of his first trypanosomiasis report (Senegambia, 1902).

The first progress report of the Congo expedition was published in 1904; this has been followed by others, including the description of the "Congo Floor Maggot," by Drs. Dutton, Todd, and Christy, and the "Cerebro-spinal Fluid in Trypanosomiasis," by Dr. Christy; "A Comparison of the Animal Reactions of the Trypanosomes of Uganda and Congo Free State Sleeping Sickness with that of *Trypanosoma gambiense*," by Drs. Thomas and Linton; "Two Cases of Trypanosomiasis in Europeans," by Drs. Dutton, Todd, and Christy; and "Supplementary Notes on the Tsetse-flies," by Mr. E. E. Austen. More recently Dr. Dutton wrote an interesting paper on the "Intermediate Host of the *Filaria cypseli*" (the filaria of the African swift), in which he described the intermediate host as a louse (subfamily Leiothinae) in the abdominal cavity of which he observed the various stages of the development of the filaria. He showed that the infection was probably spread by the birds eating the infected lice.

Toward the end of 1904 the investigators had reached Stanley Falls, and quite independently Drs. Dutton and Todd verified the discovery of the cause of tick spirillum fever in man made a few weeks previously by Milne and Ross in the Uganda Protectorate; but, furthermore, they were able to transmit the disease to monkeys and rabbits by means of the bite of the infected tick. They were able to make *post mortem* examinations on cases of the fever, in the course of which Dr. Dutton contracted the disease by a *post mortem* wound and Dr. Todd an abortive attack apparently directly through a tick bite. From this fever they recovered, in Dr. Dutton's case after four typical relapses. Their researches into the relationship between the infection in man and the tick were so far advanced that they were able to prepare a report which is due by the next mail. In the meantime, they have given an account of an experiment in which tick spirillum fever has been conveyed to a monkey by the bites of young ticks during the first feed after hatching from the ova of naturally infected adults.